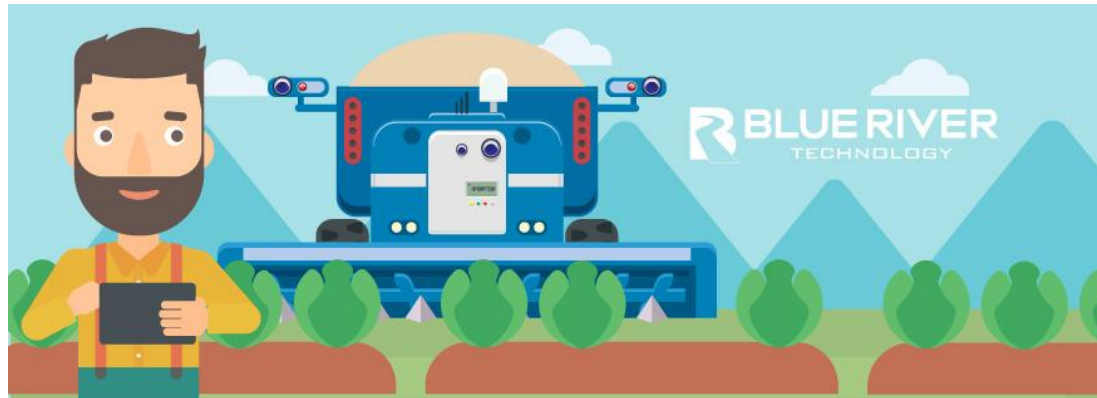


# Career Readiness

## Space Cookies Team 1868A

By: Anushree, Ellen, Harshini, Julia, Kavya, and Vidhi  
San Francisco Bay Area

Women make up 28% of the workforce in STEM. One of these women is Rachael Putnam, our mentor, and a robotics integration engineer at Blue River Technology. Blue River Technology is a subsidiary of John Deere. Their mission is to create sustainable agricultural equipment. We chose this company because we hold our meetings there. We also chose Blue River because it was not very well known. We interviewed Rachael to learn more about Blue River and her work at the company.



Here is an drawing of Blue River Technology in the back is a drawing of one of Blue Rivers work.

The company that we had chosen was Blue River where they apply machine learning to design and develop state of the art agriculture equipment to help farmers. We had chosen Blue River because it was local and one of our mentors was a worker there. We also chose this company because it was impacting the most important commodity, the full food supply. Our team had found this company unique as it created a big impact and was unfamiliar so we had decided to choose it.



**JOHN DEERE**



Here is an image of Blue River Technology and the company that owns it, John Deere.

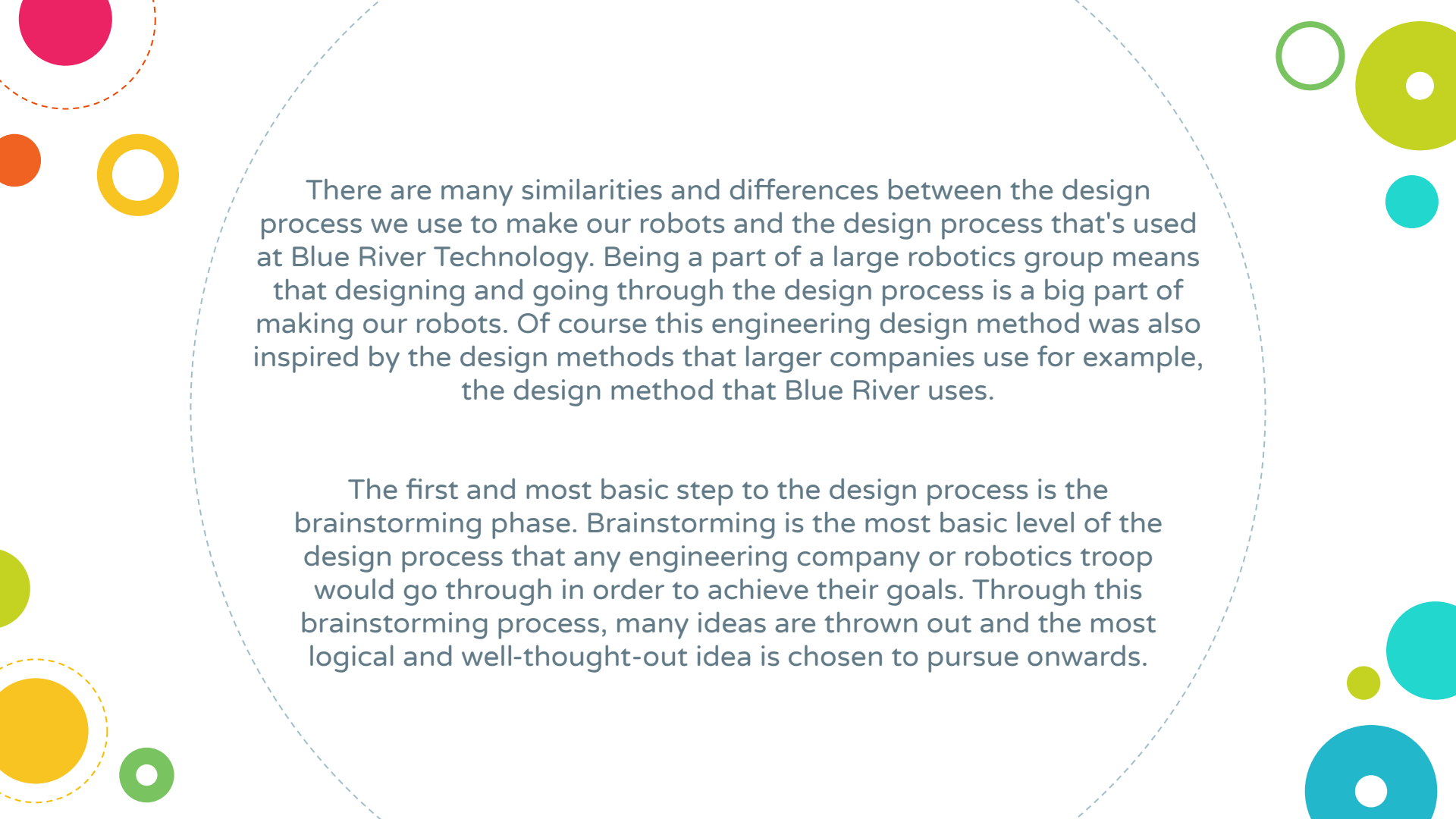
The engineering design process applied in this company is split into two portions. The manufacturing company John Deere first identifies problems in agricultural technology which they then send to their automation and computer vision subsidiary Blue River Technology to brainstorm solutions and prototype proof of concepts. This counterpart implements the loop of prototyping, testing, and iterating to come up with a final design. From there, the engineering design process is finished by sending prototypes back to John Deere, which productionizes the model and sells them to farmers and other consumers.



This is an image of the engineering design process as seen the engineering design process can repeat several times if needed.

Blue River has a process which includes the engineering design process. One of the women is named Rachael. How she applies the system is that she collaborates with other people to share information about the project. As they work together, she can also define a problem by asking her consumers or the people who use it for their opinion on the problem. This is very helpful as they will know what to improve and what to fix. Then apply it to their future prototype. With that information, they can work together to solve it.

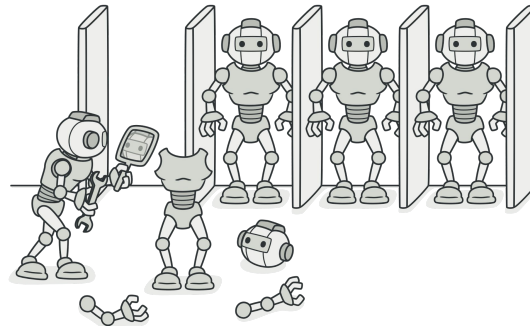




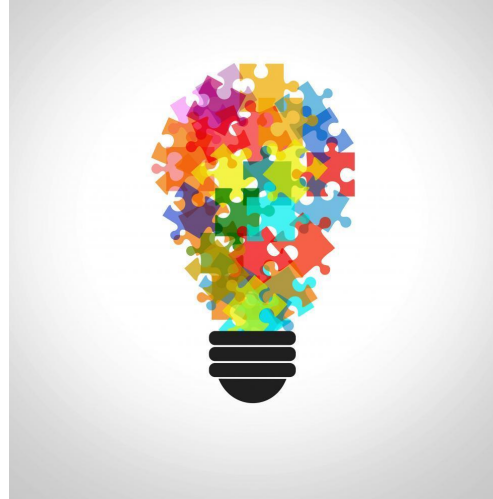
There are many similarities and differences between the design process we use to make our robots and the design process that's used at Blue River Technology. Being a part of a large robotics group means that designing and going through the design process is a big part of making our robots. Of course this engineering design method was also inspired by the design methods that larger companies use for example, the design method that Blue River uses.

The first and most basic step to the design process is the brainstorming phase. Brainstorming is the most basic level of the design process that any engineering company or robotics troop would go through in order to achieve their goals. Through this brainstorming process, many ideas are thrown out and the most logical and well-thought-out idea is chosen to pursue onwards.

The next thing that Blue River does in order to complete their design process is that they set their prototypes into action in order to pick up real data to see whether the device they have created is performing its tasks at an optimal efficiency rate. Although our process is a little different when creating our robot we prototype as well and test out each element in order to check if the element is performing its tasks the most efficiently. One big commonality of these things is that the design process is started off with the intention of having a finished goal at the end.

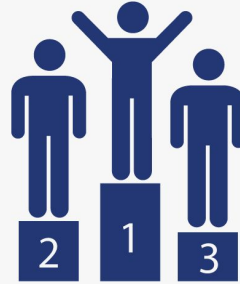


In any field of work, there are always ways the engineering design process is utilized, however subtle or explicit. For example, in building a business, one would go through the steps starting from identifying the problem and its limitations. The same steps can be applied to the medical field or in dentistry, where a patient sees the doctor with a problem to be solved, and the medical professional takes on the responsibility of using their knowledge in that area of expertise to help the patient solve their problem. We practice this engineering design process every moment we are in the lab.





Additionally, VEX Robotics as a whole prepares all members of the troop for a future career by building essential skills such as teamwork, independence, leadership skills, and public speaking. This is done through various outreach activities and just being a part of a team with goals as such.



## Credits

“Welcome - Welcome: Blue River Technology.” *Welcome - Welcome | Blue River Technology*, <https://bluerivertechnology.com/>.

“Scientists Testing Robots Movement by Framestock on Envato Elements.” *Envato Elements*, <https://elements.envato.com/scientists-testing-robots-movement-RFV2ELX>.

“Hello, World!” *Refactoring.Guru*, <https://refactoring.guru/>.

Designer, et al. “Simple Set of Design Thinking Related Vector Line Icons. Outline Symbol Collection Stock Vector Art 1186250065.” *IStock*, <https://www.istockphoto.com/search/2/image?mediatype=illustration&phrase=prototype>.

John Deere Acquires Blue River Technology - 2017-01-01 - Crunchbase Acquisition Profile.” *Crunchbase*, <https://www.crunchbase.com/acquisition/john-deere-acquires-blue-river-technology--179e751e>.

Moreh, Jack. “Puzzle in a Lightbulb - Problem Solving Concept.” *Free Stock Photo of Puzzle in a Lightbulb - Problem Solving Concept | Download Free Images and Free Illustrations*, <https://freerangestock.com/photos/40623/puzzle-in-a-lightbulb--problem-solving-concept.html>.